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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,014	07/10/2001	Wei-Sing Chu	2313-116	8862

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EXAMINER

YANG, NELSON C

ART UNIT	PAPER NUMBER
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1641

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/901,014

Applicant(s)

CHU, WEI-SING

Examiner

Nelson Yang

Art Unit

1641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 70-79 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 70-79 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's cancellation of claims 1-69 and 80-91 are acknowledged and have been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 73 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. While applicant has specified the use of a temperature sensor in the specification, applicant has not specified the added limitation of an infrared temperature sensor.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 70-72, 74-78 are rejected under 35 U.S.C. 102(e) as being anticipated by Lang et al [US 5,941,825]. Lang et al teaches a system comprising an ultrasound transducer, an ultrasound generator, an ultrasound sensor (ultrasound detector) and a central processing unit (computational unit) (claims 26, 35-38).
6. With respect to claims 71 and 72, the system is comprised of more than one type of sensor (claim 19). Specifically, Lang et al teaches the use of a first detector that receives an alpha ultrasound signal and a second detector that receives a beta ultrasound signal.
7. With respect to claim 74, the system is comprised of multiple transducers (claim 35).
8. With respect to claim 75, the sensor produces readings which are processed by the central processing unit (claim 19).
9. With respect to claim 76, the ultrasound generator is controlled by the central processing unit (column 7, lines 52-67).
10. With respect to claim 77 and 78, the transducer generates ultrasound of a frequency in the range of 100 KHz to 50 MHz (claims 14, 18).
11. Claims 70-72, 74-76 are rejected under 35 U.S.C. 102(e) as being anticipated by Blank [US 5,913,826]. Blank teaches a system comprising an ultrasound transducer, an ultrasound generator, an ultrasound sensor and a central processing unit (columns 11-16).
12. With respect to claim 71 and 72, the system is comprised of more than one type of sensor, such as pressure sensors, pulse sensors, temperature sensors, and ultrasound sensors (column 11, line 61 – column 14, line 11).
13. With respect to claim 74, the system is comprised of more than one transducer, specifically, a multiple transducer array (column 13, lines 20-25).

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14. With respect to claim 75, the sensor produces readings which are processed by the central processing unit (column 14, line 12 – column 16, line 52).

15. With respect to claim 76, the ultrasound generator is controlled by the central processing unit (column 16, line 53 – column 18, line 44).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claim 73 rejected under 35 U.S.C. 103(a) as being unpatentable over Lang et al [US 5,941,825] in view of Bartosiak et al [US 5,011,296]. Although Lang et al teaches a system that requires maintaining the system at specific temperatures, he does not specifically teach the use of an infrared temperature sensor. However, Bartosiak et al teaches that infrared thermometers are well known instruments for remotely determining temperature when it is neither possible nor practical to use a direct temperature sensing probe (column 1, lines 10-15). Therefore it would be obvious to use an infrared temperature sensor in the system of Blank in order to remotely determine temperature.

Claim 79 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lang et al [US 5,941,825] in view of Gravlee, Jr. [US 3,961,097]. The system of Lang et al as disclosed above fails to recite the specific feature of producing ultrasound of a power in the range of 0.01-200 W/cm². However, Gravlee, Jr. teaches that the intensity of ultrasound must be maintained at a

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level below the level at which damage to cells in the tissue occurs [column 3, lines 48-64]. It would have been obvious for a person of ordinary skill in the art to maintain the power or intensity of the ultrasound within this particular range, because it has long been settled to be no more than routine experimentation for one of ordinary skill in the art to discover an optimum value of a result effective variable. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum of workable ranges by routine experimentation.” Application of *Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235-236 (C.C.P.A. 1955). “No invention is involved in discovering optimum ranges of a process by routine experimentation.” *Id.* At 458, 105 USPQ at 236-237. The “discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.” Application of *Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 218-219 (C.C.P.A. 1980). Since applicant has not disclosed that the specific limitations recited in instant claims 79 are for any particular purpose or solve any stated problem and the prior art teaches that to maintain the intensity of ultrasound at a low level, in order to prevent damage to cells in the tissue, absent unexpected results, it would have been obvious for one of ordinary skill to discover the optimum workable ranges of the system disclosed by Lang et al by normal optimization procedures known in the art.

18. Claim 73 rejected under 35 U.S.C. 103(a) as being unpatentable over Blank [US 5,913,826] in view of Bartosiak et al [US 5,011,296]. Although Blank teaches a system is comprised of an ultrasound sensor and a temperature sensor, he does not specifically teach the use of an infrared temperature sensor. However, Bartosiak et al teaches that infrared thermometers are well known instruments for remotely determining temperature when it is neither possible nor practical to use a direct temperature sensing probe (column 1, lines 10-15).

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Therefore it would be obvious to use an infrared temperature sensor in the system of Blank in order to remotely determine temperature.


19. Claim 79 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blank [US 5,913,826] in view of Gravlee, Jr [US 3,961,097]. The system of Blank as disclosed above fails to recite the specific feature of generating ultrasound of a power in the range of 0.01-200 W/cm². However, Gravlee, Jr. teaches that the intensity of ultrasound must be maintained at a level below the level at which damage to cells in the tissue occurs [column 3, lines 48-64]. It would have been obvious for a person of ordinary skill in the art to maintain the power or intensity of ultrasound within this particular range of 0.01-200 W/cm², because it has long been settled to be no more than routine experimentation for one of ordinary skill in the art to discover an optimum value of a result effective variable. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum of workable ranges by routine experimentation.” Application of Aller, 220 F.2d 454, 456, 105 USPQ 233, 235-236 (C.C.P.A. 1955). “No invention is involved in discovering optimum ranges of a process by routine experimentation.” Id. At 458, 105 USPQ at 236-237. The “discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.” Application of Boesch, 617 F.2d 272, 276, 205 USPQ 215, 218-219 (C.C.P.A. 1980). Since applicant has not disclosed that the specific limitations recited in instant claim 79 are for any particular purpose or solve any stated problem and the prior art teaches that to maintain the intensity of ultrasound at a low level, in order to prevent damage to cells in the tissue, absent unexpected results, it would have been obvious for one of ordinary skill to discover the optimum workable ranges of the system disclosed by Blank by normal optimization procedures known in the art.

Conclusion

20. No claims are allowed.
21. The following references are also cited as art of interest: Anderson et al [US 6,168,948], Anderson et al [US 6,197,595], Coppleson et al [US 5,800,350], Drmanac et al [US 6,383,742 B1], Drmanac et al [US 6,401,267], Francis et al [US 6,524,795 B1], Iino et al [US 5,944,665 A], Knoll [US 6,548,311 B1], Kretz [US 4,403,509], Lanza et al [US 5,958,371], Lanza et al [US 6,548,046], Virtanen [US 6,342,349 B1].
22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson Yang whose telephone number is 703-305-4508. The examiner can normally be reached on 8:30-5:00.
23. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long V Le can be reached on 703-305-3399. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

NY


LONG V. LE
SUPERVISORY PATENT EXAMINER
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09/26/03